

10/561043

IAP6 Rec'd PCT/PTO 16 DEC 2005

1/5

SEQUENCE LISTING<110> Juelich Enzyme Products
GmbH<120> Oxidoreductase from Pichia capsulata<130> (TH)4090<160> 10 <170>
PatentIn version 3.1<210> 1<211> 1175<212> DNA<213> Pichia capsulata<400> 1
cgcgggtggcg gccgctctag aactagtgg a tccccgggc tgcaggatt cggcacgagg 60
atctttctca actacaatgt ctgctctc caaaacccag gccggttaca tcttcaagaa 120
gggtgccggt cacatcgta aggccgaggt tccaatcccc aagccaaactg gtgcccaatc 180
tcttcttagg gtcaaggctg caggaatgtg ccactctgac ttgcacgtca ttggagaaac 240
attggaggtc cctaccgatg ggtacgtgct cggtcacgaa attgctggtg aattggtgaa 300
gatcgagac tcggtcaacc ctgaagttt taaggtgggaa ggccgttatg ctgttcatgg 360
actgaattcg tgtggatcct gtgagatgtg tcgtaccggc catgacaatg actgtactgg 420
aaatgaatcg aaatggtacg gtctggaaat tagtggtggt taccagcagt acctgctgg 480
gccaattcg caccatctat tgccatttcc agataacgtg tcctacgaag ttgctgctgc 540
cacctctgat gctgtcttga ctccatacca tgctatcaag aattccggag tgactccatc 600
ttctaaggcg ttgatgtttg gtctgggtgg tttggatcg aacgcacttc agatcctcaa 660
ggcatttggc gcctatgtgg ttgccgttga tgtcaagccc gcatccaaag caattgccga 720
cgaattcaaa gcccgtgaat tctataccga tatcagccaa tcttcttggaa aaccagcctc 780
gtttgattac tggtttgact tcgttgcgt gcaggtcacc ttgcacatct gccagaagta 840
tatcaagtcc cacggtacca tcttcccagt gggctgggc tcgagcaagc tgactttcga 900
cttggaaac ctggcatttc gtgaagtaaa aattgttggt aacttctggg gtacttctca 960
ggaacagatc gaagcaatgg agctggtagt ctcggtagg gtcaaggctc aagttcacac 1020
caccgaacctt gaaaacccctc ctgaatcact tgaaaaactg gaggaggta agatcaatgg 1080
aagattgggt atgcttccat gatcacaaac tatttataac gagatacggg aaaaagttta 1140
atatgatgtc gttttccaa tcaaaagggg gcccc 1175

<210> 2<211> 366<212> PRT<213> Artificial<400> 2

Ala Val Ala Ala Ala Leu Glu Leu Val Asp Pro Pro Gly Cys Arg Asn
1 5 10 15

Ser Ala Arg Gly Ser Phe Ser Thr Thr Met Ser Ala Leu Ser Lys Thr
20 25 30

Gln Ala Gly Tyr Ile Phe Lys Lys Gly Ala Gly His Ile Val Lys Ala
35 40 45

Glu Val Pro Ile Pro Lys Pro Thr Gly Ala Gln Ser Leu Leu Arg Val
50 55 60

Lys Ala Ala Gly Met Cys His Ser Asp Leu His Val Ile Gly Glu Thr

BEST AVAILABLE COPY

2/5

65

70

75

80

Leu Glu Val Pro Thr Asp Gly Tyr Val Leu Gly His Glu Ile Ala Gly
85 90 95

Glu Leu Val Glu Ile Gly Asp Ser Val Asn Pro Glu Val Phe Lys Val
100 105 110

Gly Gly Arg Tyr Ala Val His Gly Leu Asn Ser Cys Gly Ser Cys Glu
115 120 125

Met Cys Arg Thr Gly His Asp Asn Asp Cys Thr Gly Asn Glu Ser Lys
130 135 140

Trp Tyr Gly Leu Gly Ile Ser Gly Gly Tyr Gln Gln Tyr Leu Leu Val
145 150 155 160

Pro Asn Ser His His Leu Leu Pro Ile Pro Asp Asn Val Ser Tyr Glu
165 170 175

Val Ala Ala Ala Thr Ser Asp Ala Val Leu Thr Pro Tyr His Ala Ile
180 185 190

Lys Asn Ser Gly Val Thr Pro Ser Ser Lys Val Leu Met Phe Gly Leu
195 200 205

Gly Gly Leu Gly Ser Asn Ala Leu Gln Ile Leu Lys Ala Phe Gly Ala
210 215 220

Tyr Val Val Ala Val Asp Val Lys Pro Ala Ser Lys Ala Ile Ala Asp
225 230 235 240

Glu Phe Lys Ala Asp Glu Phe Tyr Thr Asp Ile Ser Gln Ser Ser Trp
245 250 255

Lys Pro Ala Ser Phe Asp Tyr Cys Phe Asp Phe Val Ser Leu Gln Val
260 265 270

Thr Phe Asp Ile Cys Gln Lys Tyr Ile Lys Ser His Gly Thr Ile Phe
275 280 285

Pro Val Gly Leu Gly Ser Ser Lys Leu Thr Phe Asp Leu Gly Asn Leu
290 295 300

Ala Leu Arg Glu Val Lys Ile Val Gly Asn Phe Trp Gly Thr Ser Gln
305 310 315 320

3/5

Glu Gln Ile Glu Ala Met Glu Leu Val Ser Ser Gly Arg Val Lys Pro
 325 330 335

Gln Val His Thr Thr Glu Leu Glu Asn Leu Pro Glu Ser Leu Glu Lys
 340 345 350

Leu Glu Glu Gly Lys Ile Asn Gly Arg Leu Val Met Leu Pro
 355 360 365

<210> 3<211> 17<212> DNA<213> Artificial<400> 3
 gtaatacgac tataagg 17

<210> 4<211> 21<212> DNA<213> Artificial<400> 4
 caattAACCC tcactaaagg g 21

<210> 5<211> 30<212> DNA<213> Artificial<400> 5
 ggaattccat atgtctgctc tctccaaaac 30

<210> 6<211> 32<212> DNA<213> Artificial<400> 6
 cactgcatgc tgatgtctgc tctctccaaa ac 32

<210> 7<211> 31<212> DNA<213> Artificial<400> 7
 cccaaGCTT catggaaAGCA taaccaatct t 31

<210> 8<211> 1026<212> DNA<213> Pichia capsulata<400> 8
 atgtctgctc tctccaaaac ccaggccggt tacatcttca agaagggtgc cggtcacatc 60
 gtcaaggccg aggttccaat ccccaagCCA actggtgccc aatctttct tagggtaag 120
 gctgcaggaa tggccactc tgacttgac gtcattggag aaacattgga ggtccctacc 180
 gatgggtacg tgctcggtca cggaaattgct ggtgaattgg tggagatcgg agactcggtc 240
 aaccctgaag ttttaaggt gggaggccgt tatgtgttc atggactgaa ttctgttgg 300
 tcctgtgaga tgggtcgac cggcatgac aatgactgta ctggaaatga atcgaaatgg 360
 tacggctgg gaatttagtgg tggattaccag cagttctgc tggccaaa ttccgaccat 420
 ctattgccta ttccagataa cgtgtcctac gaagttgctg ctgccacctc tgatgtgtc 480
 ttgactccat accatgctat caagaattcc ggagtgtac catcttctaa ggtgttgc 540
 ttttgtctgg gtgggttggg atcgaacgca cttcagatcc tcaaggcatt tggagcctat 600
 gtgggtgccc ttgatgtcaa gcccgcattcc aaagcaattt ccgacgaaatt caaagcggat 660
 gaattctata ccgatatcag ccaatcttct tggaaaccag cctcggttga ttactgttt 720
 gacttcgttt cgctcgagg caccttcgac atctgccaga agtatataaa gtcggccgggt 780
 accatcttcc cagtgggtct gggctcgagc aagctgactt tcgacttggg aaacctggca 840
 ttgcgtgaag taaaaattgt tggtaacttc tgggttactt ctcaggaaca gatcgaagca 900

4/5

atggagctgg ttagctcggg tagggtcaag cctcaaggttc acaccaccga acttgaaaac 960
cttcctgaat cacttgaaaa actggaggag ggtaagatca atgaaagatt gtttatgctt 1020
ccatga 1026

<210> 9<211> 341<212> PRT<213> Pichia capsulata<400> 9

Met Ser Ala Leu Ser Lys Thr Gln Ala Gly Tyr Ile Phe Lys Lys Gly
1 5 10 15

Ala Gly His Ile Val Lys Ala Glu Val Pro Ile Pro Lys Pro Thr Gly
20 25 30

Ala Gln Ser Leu Leu Arg Val Lys Ala Ala Gly Met Cys His Ser Asp
35 40 45

Leu His Val Ile Gly Glu Thr Leu Glu Val Pro Thr Asp Gly Tyr Val
50 55 60

Leu Gly His Glu Ile Ala Gly Glu Leu Val Glu Ile Gly Asp Ser Val
65 70 75 80

Asn Pro Glu Val Phe Lys Val Gly Gly Arg Tyr Ala Val His Gly Leu
85 90 95

Asn Ser Cys Gly Ser Cys Glu Met Cys Arg Thr Gly His Asp Asn Asp
100 105 110

Cys Thr Gly Asn Glu Ser Lys Trp Tyr Gly Leu Gly Ile Ser Gly Gly
115 120 125

Tyr Gln Gln Tyr Leu Leu Val Pro Asn Ser His His Leu Leu Pro Ile
130 135 140

Pro Asp Asn Val Ser Tyr Glu Val Ala Ala Ala Thr Ser Asp Ala Val
145 150 155 160

Leu Thr Pro Tyr His Ala Ile Lys Asn Ser Gly Val Thr Pro Ser Ser
165 170 175

Lys Val Leu Met Phe Gly Leu Gly Gly Leu Gly Ser Asn Ala Leu Gln
180 185 190

Ile Leu Lys Ala Phe Gly Ala Tyr Val Val Ala Val Asp Val Lys Pro
195 200 205

Ala Ser Lys Ala Ile Ala Asp Glu Phe Lys Ala Asp Glu Phe Tyr Thr
210 215 220

Asp Ile Ser Gln Ser Ser Trp Lys Pro Ala Ser Phe Asp Tyr Cys Phe
225 230 235 240

Asp Phe Val Ser Leu Gln Val Thr Phe Asp Ile Cys Gln Lys Tyr Ile
245 250 255

Lys Ser His Gly Thr Ile Phe Pro Val Gly Leu Gly Ser Ser Lys Leu
260 265 270

Thr Phe Asp Leu Gly Asn Leu Ala Leu Arg Glu Val Lys Ile Val Gly
275 280 285

Asn Phe Trp Gly Thr Ser Gln Glu Gln Ile Glu Ala Met Glu Leu Val
290 295 300

Ser Ser Gly Arg Val Lys Pro Gln Val His Thr Thr Glu Leu Glu Asn
305 310 315 320

Leu Pro Glu Ser Leu Glu Lys Leu Glu Gly Lys Ile Asn Gly Arg
325 330 335

Leu Val Met Leu Pro
340

<210> 10<211> 12<212> PRT<213> Pichia capsulata<400> 10

Lys Thr Gln Ala Gly Tyr Ile Phe Lys Lys Gly Ala
1 5 10